Ontario
BioCorridor

A WORLD LEADER IN BIOTECHNOLOGY

Introduction

Ontario, Canada is one of the most dynamic and profitable biotechnology centres in the world. Brimming with strong research capacity, successful commercial activity, skilled labour and clusters of critical mass, Ontario is a place where the business of biotechnology is flourishing.

The Ontario BioCorridor represents the province's eight major biotechnology clusters: the cities of Guelph, Hamilton, Kingston, London, Mississauga, Ottawa, Toronto and the Region of Waterloo. Each of these clusters is just an hour by air from major U.S. centres and within a day's drive to over half the U.S. market. The outstanding performance of Ontario's biotechnology sector is powered by key strengths in the broad spectrum of biotechnology ranging from molecular biology and medical devices to agriculture and forestry. This publication provides an overview of the biotech industry in Ontario, together with highlights of the core strengths and leading developments in each of the major clusters. Five emerging biotech areas are also identified.

Biotechnology is an industry built on breakthroughs in understanding genetic processes. Even in its early stages, biotechnology is widely perceived to be the next great frontier of scientific advancement that will bring with it whole new industries. The greatest success will come from the convergence of biotechnology with existing industries to produce products and processes that are better, more efficient and cost competitive. Ontario is embracing these challenges and invites you to explore the possibilities.

This publication was produced by the Ontario BioAlliance, a group formed by the major Ontario municipalities in the biotech sector and represented in this publication. The BioAlliance gratefully acknowledges the financial support of the Ministry of Enterprise, Opportunity and Innovation as well as the advice and contributions of the Ontario Biotechnology Secretariat.

Published and designed by
Promotive Communications Inc.
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18 **COMMERCIALIZATION INITIATIVES**
The MaRS Discovery District, London Biotechnology Commercialization Centre and Ottawa Biotechnology Incubation Centre are dedicated to helping entrepreneurs build successful businesses from Ontario's outstanding science.

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Ontario

ONTARIO AIMS TO BECOME ONE OF THE TOP THREE BIOTECHNOLOGY CLUSTERS IN NORTH AMERICA!

INTRODUCTION:

Ontario is one of the best places in the world to live and do business! With a population of 11.6 million, Ontario is Canada's most populous and dynamic province. With over one-third of Canada's population, Ontario offers a huge market and a plentiful and growing supply of skilled labour.

RESEARCH:

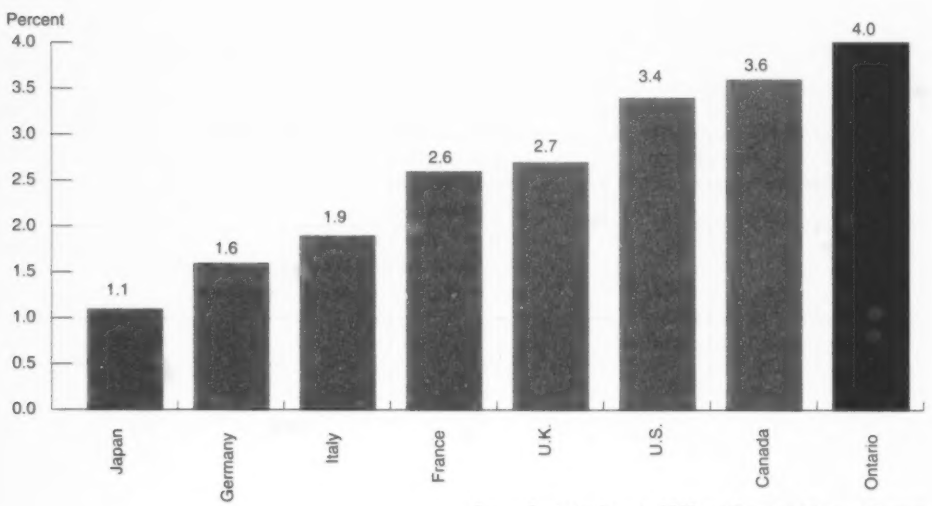
Ontario is an ideal place to do research and development. The province provides a critical mass of scientific talent, has world-class research facilities and offers superb R&D tax credits, low corporate taxes and business costs.

Research spending in the province has increased by more than 300 percent over the past decade and the total annual value now exceeds $1.5 billion. The province has a strong R&D foundation on which to build. Ontario is a leader in key R&D industries and home to most of Canada's largest R&D companies.

Ontario has the world's most generous R&D tax credits. Ontario's R&D tax treatments, combined with those of the federal government, can cut the after-tax cost of a $100 R&D expenditure to less than $42.

Ontario has more than 60 renowned research centres with a history of collaboration with industry. Since 1997, the Ontario government has committed more than $4 billion to R&D and this funding is expected to leverage another $5 billion from other partners for a total investment of over $9 billion.

ONTARIO LEADS G-7 ECONOMIC GROWTH **AVERAGE REAL GDP GROWTH 1996-2001**



Source: Statistics Canada, OECD and Ontario Ministry of Finance

BIOTECH INDUSTRY:

Biotechnology has been called the growth sector of the 21st century and Canada leads the world in biotechnology firms per capita, with Ontario home to more than half of the country's brand-name pharmaceutical and medical devices industries, and almost half of the medical biotechnology industry.

Ontario has North America's third largest regional concentration of biotechnology firms and is sixth largest in revenues earned. Ontario has a vibrant biotechnology sector with strengths in the biomedical, pharmaceutical, medical devices, agricultural biotechnology and bioproducts fields.

BIOMEDICAL SECTOR:

The province's biomedical sector employs more than 33,000 highly educated people and will post an estimated $1.3 billion in revenues for 2002. The Ontario biotechnology sector is built on world-class science. Canada is a world leader in molecular biology and medical genetics and has an excellent infrastructure for conducting clinical trials. Canadians discovered or played a role in discovering the genetic cause of eight of the first 42 single-gene diseases whose genetic defect has been discovered.

PHARMACEUTICAL SECTOR:

Ontario's pharmaceutical sector employs more than 15,000 well-educated, talented people and includes global giants like GlaxoSmithKline Inc., Amgen Inc., Biogen Inc., Genzyme Corp., AstraZeneca PLC, Eli Lilly and Co., Pfizer Inc. and homegrown stars like Biovail Corp., Apotex Inc., and Patheon Inc. In 2002, the pharmaceutical sector in Ontario recorded sales of about $6 billion.

Ontario is renowned as a site for clinical trials because it offers a large and ethnically diverse patient population, a centrally managed public health-care system that facilitates recruitment and tracking, and R&D tax credits for Phase I to III trials.

MEDICAL DEVICES SECTOR:

Ontario's medical devices sector, which recorded sales of more than $1.9 billion in 2001, employs more than 19,000 highly educated people. It includes 500 manufacturing companies ranging from subsidiaries of global leaders like GE Medical Systems and Johnson & Johnson Medical Products to niche-driven domestic companies like World Heart Corp., SciCan, Labtician Ophthalmics Inc., CME Telemetrix Inc. and International Medical Innovations Inc. (IMI).

AGRICULTURAL BIOTECH/BIOPRODUCTS SECTOR:

Ontario's agricultural biotech/bioproducts sector employs more than 6,000 people, including 700 top-notch scientists, and invests $166 million annually in agricultural-food research at 12 world-class institutions. This sector works closely with the manufacturing sector in the production of biochemicals and biofuels. According to the Technology Partnership Practice Battelle Memorial Institute, Ontario ranks in the top three jurisdictions in North America in terms of workforce and R&D expenditures in the agricultural biotechnology sector.

THE ONTARIO ECONOMY

- Ontario is...
  - 41.9% of Canada's GDP
  - 38.3% of the population
  - 39.6% of employment
  - 53.5% of the manufacturing base
  - 45% of the financial services base
  - 47.5% of high-tech industries
  - the recipient of 53.1% of international immigration
  - 50% of total Canadian exports

"For companies like ours that want to conduct innovative R&D and commercialize it, Ontario really is the place to be. As well as first-class research minds and facilities, the province offers superb R&D tax credits, low corporate taxes and business costs and some of the best technology transfer assistance in North America."

- David Dennis, PhD, President and CEO, Performance Plants Inc.

LOCATION:

Ontario is strategically situated in the heart of North America. Ontario's biotechnology clusters are one hour by air from major U.S. centres and within a day's drive of over half of the U.S. market.

Ambitious and prosperous, safe and secure, friendly and clean, Ontario is a preferred location for those who value quality of life. In 2001, Canada was ranked third in the United Nations' Human Development Index, a measurement of quality of life based on factors such as life expectancy, literacy and standard of living.

Ontario boasts vibrant cities, relaxed communities and offers diverse cultural and recreational amenities — from major league sports and first-run musicals, to wilderness lakes and forests. The province has a high-quality and affordable education system, and health care is universal, publicly funded and cost-effective.

Ontario's broad mix of ethnic and linguistic groups contribute to the cultural life and spirit of the province. More than 50 major languages are spoken in Ontario and the province's population is more diversified than Canada's as a whole.

Ontario offers everything companies need to succeed, including a highly educated workforce; leading-edge research facilities; generous R&D tax credits; competitive business costs; available venture capital and a strategic location.

BUSINESS:

Ontario has a dynamic and diversified economy that is growing across all sectors, outperforming its neighbours and outpacing the rest of the western world. Knowledge-intensive industries such as computers, software and medical technologies are among the fastest growing.

Ontario accounts for over half of Canada's industrial market and is situated in the heart of the $17.7-trillion North American marketplace, with access to a market of over 400 million people.

Health care is publicly supported and universally accessible in Ontario. It is one of the reasons business operating costs in Ontario are lower than in many competing jurisdictions.

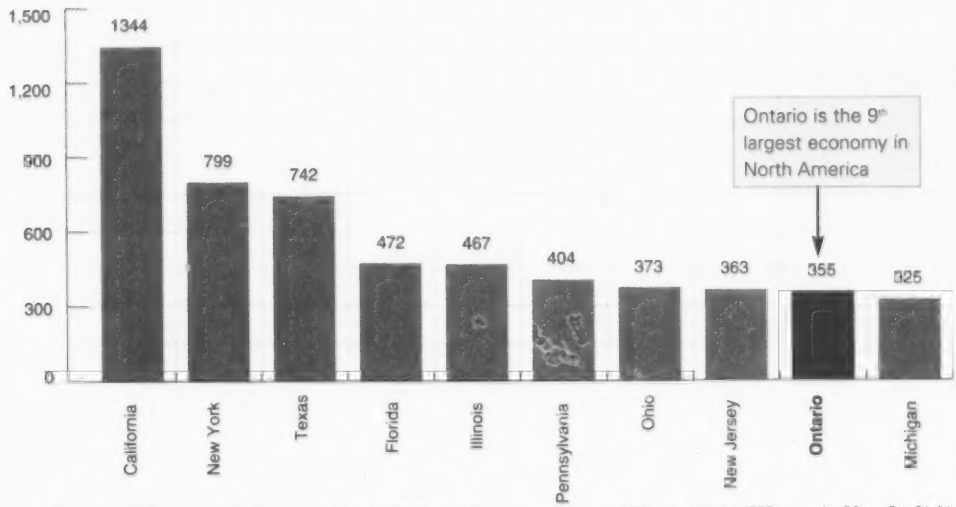
Significant cuts are being made to corporate income taxes. At the beginning of 2001, Ontario's combined federal-provincial general corporate income tax rate stood at 42.1 per cent. The Ontario government's current schedule for reducing corporate income tax rates will result in a rate of 30.1 per cent by 2005, one that will be far lower than any currently found among the Great Lakes states.

WORKFORCE:

Ontario has a strong post-secondary education system comprising 17 universities and 25 colleges of applied arts and technology. The province has an experienced, adaptable and well-educated workforce of over five million people, over 50 per cent of whom have post-secondary education.

Ontario has an outstanding biotechnology talent pool. On a per capita basis, more students graduate in Ontario in the life sciences than in most U.S. states. Over 29,000 students graduate every year in math, engineering, sciences and health professions, ensuring a steady pipeline of new talent.

TOP TEN NORTH AMERICAN JURISDICTIONS **GDP, 2000 - $US BILLIONS**



Source: U.S. Department of Commerce; Ontario Ministry of Finance *Ontario GDP calculated at PPP rate of US$1 = Cdn$1.21

THE ONTARIO GOVERNMENT SUPPORTS RESEARCH AND INNOVATION:

The government recognizes that research and innovation are key to the province's future as a competitive world leader in R&D and has created numerous programs to promote research excellence and to foster partnerships between business and research institutions.

- **THE ONTARIO RESEARCH AND DEVELOPMENT CHALLENGE FUND:** The Challenge Fund is designed to promote research excellence by increasing the R&D capacity of Ontario universities and other research institutions through private and public partnerships. This program will result in a total of $3 billion for R&D in our universities and other research institutions over the next 10 years. www.ontariochallengefund.com

- **THE ONTARIO INNOVATION TRUST:** The Trust, established in 1999 and endowed with more than $1 billion, invests in research infrastructure — research facilities, equipment and technology — at the province's universities, colleges, hospitals and research institutes. To date, the Trust's committed investments total more than $636 million, supporting 728 research projects, and involving more than 1,500 researchers and scientists. www.oit.on.ca

- **THE BIOTECHNOLOGY COMMERCIALIZATION CENTRE FUND:** This fund is investing $20 million to help create regional commercialization centres for startup biotech firms. www.biotechontario.com/guides/gov_bccf.asp

- **THE ONTARIO CANCER RESEARCH NETWORK (OCRN):** The OCRN is a $50-million initiative to support the discovery of new cancer treatments, and to create a virtual information network for cancer research and a provincial cancer tissue tumour banking network. www.ocrn.on.ca

ONTARIO OFFERS:

- 40,000 highly educated people who work in the biotech industry
- world-class research facilities
- plenty of venture capital
- a government that has made R&D a priority
- a strategic location in the heart of North America, the world's largest life sciences market

"In the biotech industry, workforce defines competitive edge and Ontario has an outstanding biotech talent pool. That's a big reason why we're here – and why we're confident we could be the first to discover a cure for diabetes."

William McGinnis, President and CEO, Diabetogen Biosciences Inc.

- **ONTARIO CENTRES OF EXCELLENCE:** Ontario provides over $50 million a year to fund networks of scientists, bringing together universities, industry and government to ensure the successful application of innovative science and technology to profitable new businesses. www.oce-ontario.org

- **ONTARIO GENOMICS INSTITUTE (OGI):** The OGI works with the Ontario government, Genome Canada, research institutions and the private sector to stimulate the discovery and commercialization of breakthroughs in this important field. www.ontariogenomics.ca

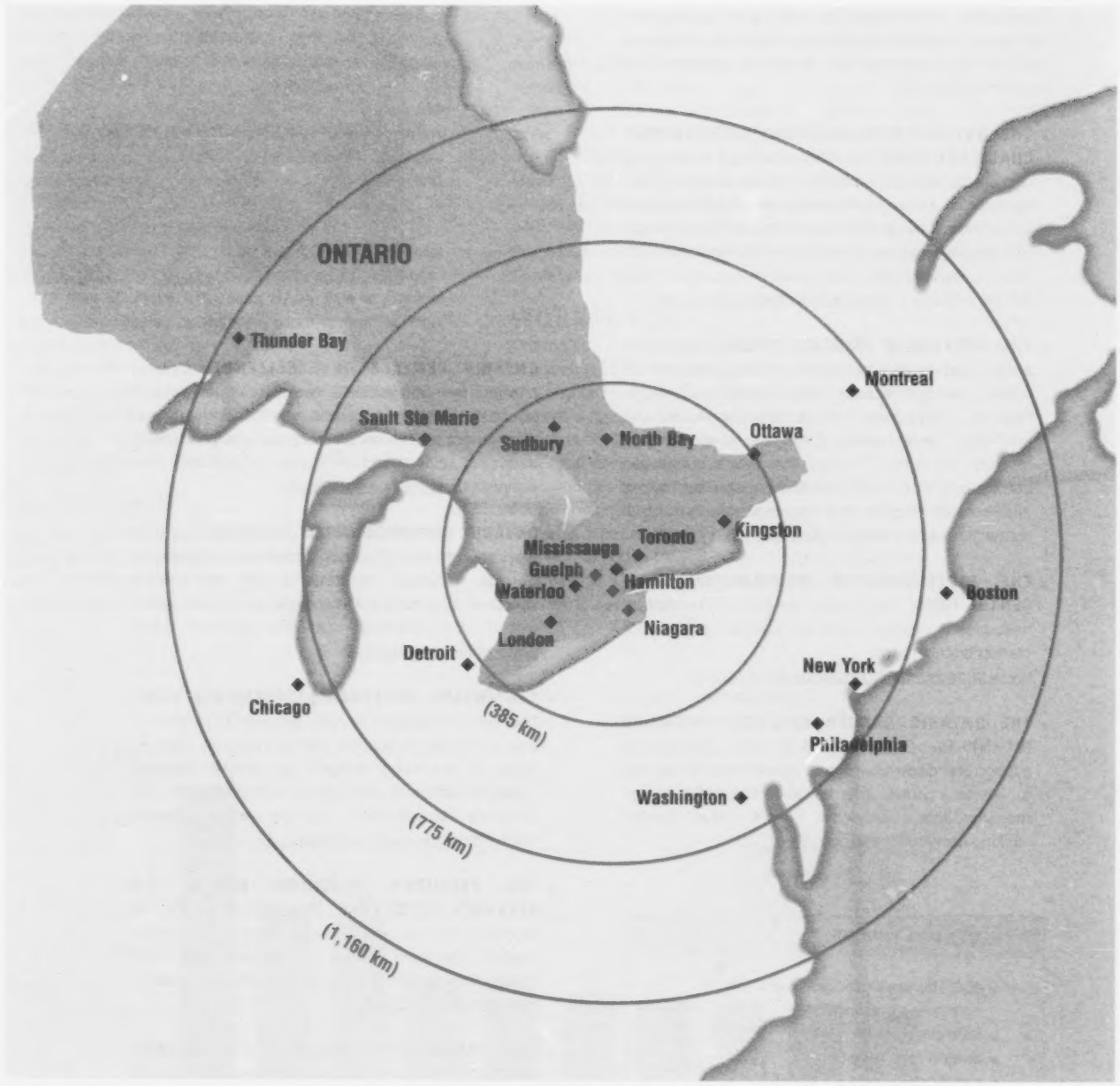
- **THE ONTARIO RESEARCH PERFORMANCE FUND:** This fund, established in 2001, provides $32 million in annual funding to support indirect research costs — such as technology transfer operations, libraries, computer networks and research administration — at Ontario's universities, colleges and research institutions. www.ontariocanada.com

- **THE PREMIER'S PLATINUM MEDAL FOR RESEARCH EXCELLENCE:** This $10-million, six-year program provides two $1-million awards annually to reward the best senior researchers and help universities attract and keep top research talent. www.ontariocanada.com

- **THE PREMIER'S RESEARCH EXCELLENCE AWARDS:** The Premier's Research Excellence Awards is (PREA) is a $127.5 million, 10-year program that aims to help world-class researchers at universities, colleges, hospitals and research institutes attract talented graduate students, post-doctoral fellows or research associates to their research teams.

Ontario

AND THE EASTERN U.S. MARKET



LOCATION AND SIZE

- Ontario lies at the centre of the North American continent. With a border that runs through the Great Lakes, stretching almost half way across the U.S.
- **131 MILLION CONSUMERS WITHIN A DAY'S DRIVE OF ONTARIO**

Guelph

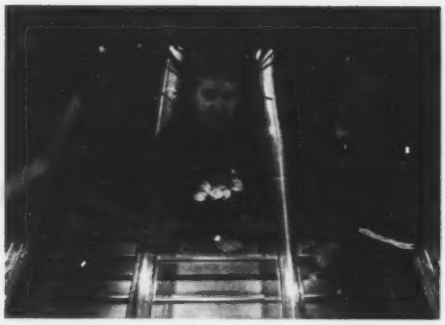
- AGRICULTURAL HEARTLAND OF ONTARIO

CORE STRENGTHS:
- Agricultural biotechnology
- Molecular transgenics
- Plant and animal genomics
- Bioproducts
- Functional foods and nutraceuticals

UNIVERSITIES/COLLEGES:
University of Guelph, Conestoga College — an Institute of Technology and Advanced Learning

COMMERCIALIZATION CENTRES AND RESEARCH PARKS:
The University of Guelph Research Park — home to 30 organizations working in the bio-science area.

SUCCESS STORIES:
- Recognized leader in biomass conversion.
- The Enviropig™ is the first transgenic pig that leads to reduced phosphorus output and is therefore more environmentally friendly.
- The Space and Advanced Life Support Agriculture (SALSA) group launches 200,000 tomato seeds into space to assess the ability of plants to provide food and establish good air quality in space travel.



MAJOR RESEARCH INSTITUTES:
- Ontario Agricultural College and Ontario Veterinary College
- University of Guelph Research Centres, including:
  - Centre for Genetic Improvement of Livestock
  - Centre for Food and Soft Materials Science
  - Canadian Bacterial Diseases Network
  - Centre for Materials Research
  - Controlled Environment Systems Research Facility
  - Food System Biotechnology Centre
  - Guelph Transgenic Plant Research Complex
  - Human Nutraceutical Research Unit
- Guelph Food Technology Centre
- Food Research Program

LEADING DEVELOPMENTS:

Inno-Centre Guelph — a mentoring program that accelerates the development and commercial success of emerging life science and agri-food companies.
MaRS Landing — a rural portal for the two-way movement of innovations and technologies between the medical community of Toronto and the veterinary, nutritional and agricultural innovators of rural Ontario.
Developing infrastructure for research on precision agriculture techniques that help manage field-scale crop production.
Establishing a carbohydrate research centre for modelling, creating and testing carbohydrate-based drugs to combat cancerous tumours.

CONTACT INFORMATION:

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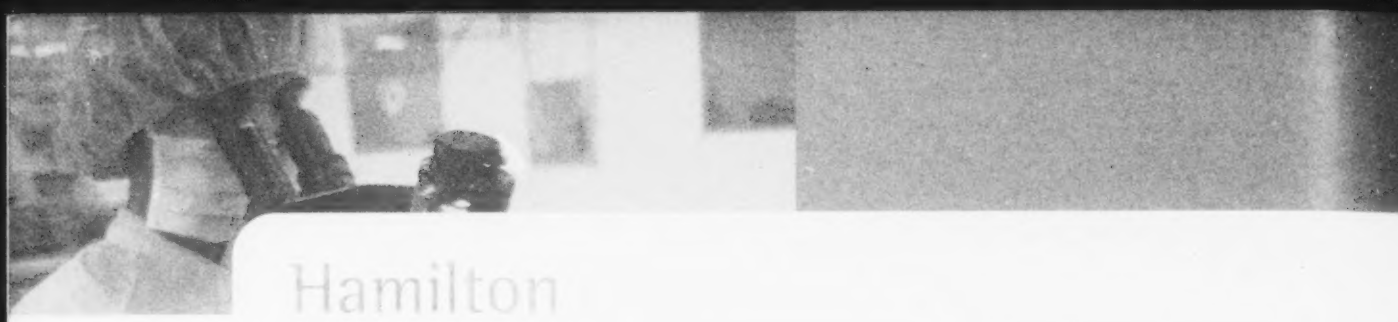


Hamilton

- A MAJOR CENTRE FOR HEALTH INNOVATION

CORE STRENGTHS:

- Drug discovery and validation
- Gene therapy
- Asthma
- Cardiology
- Thrombosis and atherosclerosis
- Clinical research
- Population health

UNIVERSITIES/COLLEGES:

McMaster University, Mohawk College of Applied Arts and Technology

COMMERCIALIZATION CENTRES AND RESEARCH PARKS:

Hamilton Incubator of Technology (HIT), a 40,000-square-foot city-operated business incubator.

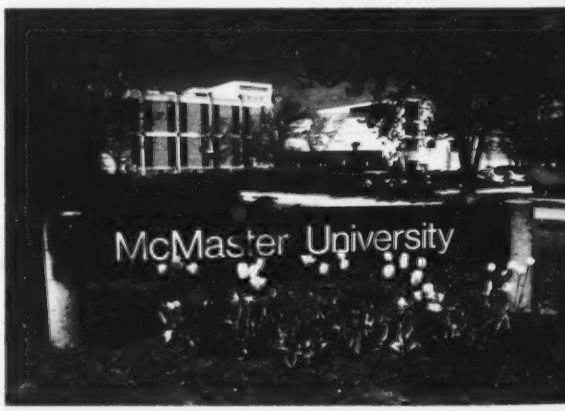
SUCCESS STORIES:

- Hamilton has revolutionized the development of evidence-based medicine by partnering scientists, methodologists and epidemiologists in its clinical trials methodologies. This has led to significant improvements in health care, management of patients and the training of investigators. Several scientists in Hamilton have been successful in commercializing their research, and spinoff companies have been established.

MAJOR RESEARCH INSTITUTES:

Affiliated with McMaster University, Hamilton Health Sciences and/or St. Joseph's Healthcare:

- Institute for Molecular Medicine and Health
- Antimicrobial Research Centre
- Centre for Gene Therapeutics
- Population Health Research Institute
- Henderson Research Centre (thrombosis and atherosclerosis)
- Clinical Trials Methodology Group
- Father Sean O'Sullivan Research Centre
- Firestone Institute for Respiratory Health
- Centre for Evaluation of Medicines
- Centre for Minimal Access Surgery
- Brain-Body Institute
- Imaging Research Centre
- Hamilton Regional Cancer Centre



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LEADING DEVELOPMENTS:

Hamilton Regional Cancer Centre is part of the U.S. National Cancer Institute Consortium for cancer research.

Hamilton reseachers are lead investigators in many high-profile clinical trials in thrombosis and cardiology.

Hamilton researchers participate in a number of national and international research collaborations in the areas of cancer, asthma, genomics, supercomputing and vaccine development.

Kingston

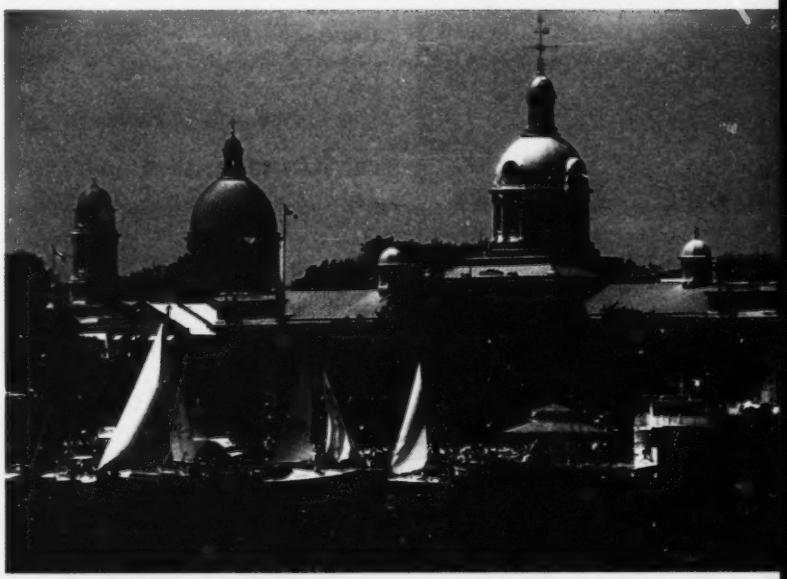
- A MODEL FOR TECHNOLOGY TRANSFER

CORE STRENGTHS:
- Cancer research
- Health sciences
- Environmental technology
- Agricultural biotechnology

UNIVERSITIES/COLLEGES:
Queen's University, Royal Military College of Canada, St. Lawrence College

COMMERCIALIZATION CENTRES AND RESEARCH PARKS:
PARTEQ Innovations — technology transfer centre
Kingston Technology Exchange Centre — nurturing the entrepreneurial culture and assisting with the early-stage growth of technology-based companies.

SUCCESS STORIES:
- PARTEQ Innovations is recognized as a leader in technology transfer.
- Kingston is home to Performance Plants Inc., the first Canadian-owned agricultural biotechnology company that develops crops with higher yield and greater resistance to drought and cold.
- Millenium Biologix Inc., a leader in skeletal repair products, marking the convergence of biology and engineering.
- High Performance Computing Virtual Laboratory (HPCVL) has created the fastest computer in Canada.



MAJOR RESEARCH INSTITUTES:
- BIOCAP Canada Foundation
- Cancer Research Institute
- Canadian Microelectronics Corp.
- Centre for Automotive Materials and Manufacturing
- Queen's Centre for Neuroscience Studies
- Kingston Technology Exchange Centre
- Human Mobility Research Centre
- High Performance Computing Virtual Laboratory (HPCVL)

LEADING DEVELOPMENTS:

- The Cancer Research Institute, a facility powered by almost 200 cancer researchers, moved into new quarters at Queen's University in April 2003.
- Biotech-in-a-Box was unveiled in November 2001 as a one-of-a kind portable laboratory for high school teachers and students.

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www.kingstonbiotech.com

London

- WHERE LIFE SCIENCE INVESTMENTS COME TO LIFE

CORE STRENGTHS:

- Advanced robotic surgery
- Advanced imaging
- Stem cell research
- Xenotransplantation
- Immunology

UNIVERSITIES/COLLEGES:

The University of Western Ontario, (UWO)
Fanshawe College

COMMERCIALIZATION CENTRES AND RESEARCH PARKS:

London Biotechnology Commercialization Centre
University of Western Ontario Research Park

SUCCESS STORIES:

Performed the world's first closed-chest robot-assisted, beating-heart bypass that drew international focus to London.
Performed Canada's first robotic surgery in urology.

MAJOR RESEARCH INSTITUTES:

- Robarts Research Institute
- Lawson Health Research Institute
- London Regional Cancer Centre
- Canadian Research and Development Centre for Probiotics
- Canadian Surgical Technologies & Advanced Robotics
- London Regional Genomics Centre
- Advanced Biotechnology Research Centre
- The UWO Photonics and Nanotechnology Laboratory
- London Health Sciences Centre Research Inc.

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LEADING DEVELOPMENTS:

The London Biotechnology Commercialization Centre opened in 2002.
Construction of the $30-million Canadian Surgical Technologies & Advanced Robotics centre will be completed in 2003.
The London Regional Innovarium, a state-of-the-art, 40,000-square-foot animal care facility which will house 2,500 animals and consolidate animal research across the city, is under construction and will be completed by fall 2004.
In 2003, Robarts Research Institute will double the size of its facility to nearly 200,000 square feet to accommodate expanding research programs in image-guided surgery and stem cell biology as well as promising new collaborations in cell biology, genomics and micro-imaging.

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The London Biotechnology Commercialization Centre opened in 2002.
Construction of the $30-million Canadian Surgical Technologies & Advanced Robotics centre will be completed in 2003.
The London Regional Innovarium, a state-of-the-art, 40,000-square-foot animal care facility which will house 2,500 animals and consolidate animal research across the city, is under construction and will be completed by fall 2004.
In 2003, Robarts Research Institute will double the size of its facility to nearly 200,000 square feet to accommodate expanding research programs in image-guided surgery and stem cell biology as well as promising new collaborations in cell biology, genomics and micro-imaging.

Mississauga

- A MAGNET FOR PHARMACEUTICAL COMPANIES

CORE STRENGTHS:
- Pharmaceuticals
- Biopharma
- Nutraceuticals
- Diagnostics

UNIVERSITIES/COLLEGES:
University of Toronto at Mississauga (UTM)
DeVry College of Technology

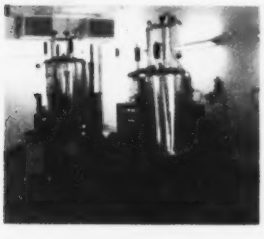
COMMERCIALIZATION CENTRES AND RESEARCH PARKS:
Sheridan Science and Technology Park, a 340-acre park with 3,000 scientists, engineers an technicians, is the foremost example of an industrial R&D environment in Canada. The extremely wide range of applied research and product development activities of this community range from energy, electronics and nucleonics to chemicals, petroleum, and pharmaceuticals.

SUCCESS STORIES:
- Mississauga has developed the desired business environment to draw a significant number of international pharmaceutical companies including AstraZeneca Canada Inc., GlaxoSmithKline Inc., and Pfizer Inc.

MAJOR RESEARCH INSTITUTES:
- Centre for Applied Biosciences and Biotechnology
- GlaxoSmithKline Biotechnology Laboratory

LEADING DEVELOPMENTS:

The Centre for Applied Biosciences and Biotechnology (UTM) offers one of only a few Canadian Master of Biotechnology programs in Canada.
The opening of the Centre for Applied Biosciences and Biotechnology in October 2002 marked the successful partnership between industry and the public sector.
AstraZeneca Canada Chair in Biotechnology (at UTM).



CONTACT INFORMATION

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L5B 3C1

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www.mississaugabiz.com/bio

Ottawa

- POWERING DISCOVERY AND COMMERCIALIZATION

CORE STRENGTHS:

- Genomics and proteomics
- Stem cells and regenerative medicine
- Drug Discovery
- Medical devices
- Bioproducts
- Convergent Technologies (biophotonics, BioMEMS, Biosensors and Informatics)

UNIVERSITIES/COLLEGES:

Carleton University, University of Ottawa, Algonquin College, La Cité Collégiale

COMMERCIALIZATION CENTRES AND RESEARCH PARKS:

Ottawa Life Sciences Technology Park, Greenbelt Research Farm, Ottawa Biotechnology Incubation Centre (2 new centres: OBIC Farm and OBIC Park), NRC Industrial Partnership Facility and 5 major Federal Government Science Campuses

SUCCESS STORIES:

- Commercialization successes include: childhood meningitis vaccine (Institute for Biological Sciences); radiotherapeutics (MDS Nordion); bioMEMS (i-Stat, Epocal); medical devices (Worldheart Corp.); and biofuels (Iogen, Ensyn).

MAJOR RESEARCH INSTITUTES:

Over 30 major research centres and institutions including:

- Ottawa Health Research Institute (OHRI)
  - Stem Cell Centre/Genomics Centre
  - Centre for Cancer Therapeutics
  - University of Ottawa Eye Institute
- University of Ottawa
  - University of Ottawa Heart Institute
  - Centre for Research in Biopharmaceuticals
  - Industrial Membrane Research Institute
- Carleton University
  - Ottawa Medical Physics Institute
- Children's Hospital of Eastern Ontario (CHEO) Research Institute
  - Apoptosis Research Centre
- National Research Council of Canada (NRC)
  - Institute for Biological Sciences
  - Institute for Chemical Processing and Environmental Technology
  - Steacie Institute for Molecular Sciences
- Canadian Stroke Network
- Stem Cell Network
- Canadian Photonics Fabrication Facility

CONTACT INFORMATION

Ottawa Life Sciences Council
600 Peter Morand Crescent, Suite 100
Ottawa, Ontario
K1G 5Z3

T: 613-521-1008
F: 613-521-3065
info@olsc.ca
www.olsc.ca

LEADING DEVELOPMENTS:

30 plus new VC-backed companies annually (20% life sciences)
Over 16 products in cancer development pipeline
$500 million of new life sciences infrastructure
Seed funding for new cGMP Pilot Manufacturing Facility
Formation of Advanced Biophotonics Consortium (ABC)

Toronto

- WHERE MEDICAL RESEARCH AND BUSINESS MEET

CORE STRENGTHS:
- Biomedical
- Genomics/proteomics
- Stem cell research
- Photonics
- Cancer
- Neurosciences
- Central nervous system

UNIVERSITIES/COLLEGES:
University of Toronto, York University, Ryerson University and four technical colleges

SUCCESS STORIES:
- Toronto is North America's fourth largest centre of biotech activity and is home to the University of Toronto Faculty of Medicine, recognized by the United Nations as one of the world's top four international centres of research excellence.
- Brand-name pharmaceutical multinationals have invested more than $1.1 billion in local research and development over the past decade.
- Tradition of scientific excellence including discovery of insulin, hemopoietic stem cell, T-cell receptor, development of first heart pacemaker, first heart/lung transplant.

MAJOR RESEARCH INSTITUTES:
- The Hospital for Sick Children Research Institute
- Samuel Lunenfeld Research Institute of Mount Sinai Hospital
- Sunnybrook and Women's College HealthSciences Centre
  - Centre for Research in Women's Health
  - Sunnybrook and Women's College Research Institute
- Centre for Addiction and Mental Health
- University Health Network
  - Toronto Western Research Institute
  - Toronto General Research Institute
  - Ontario Cancer Institute and Advanced Medical Discovery Institute
- University of Toronto's numerous research centres and institutes including:
  - Proteomics Research Centre
  - Banting and Best Research Centre
  - Centre for Research in Neurodegenerative Diseases
  - Advanced Protein Technologies Centre
  - Institute of Biomaterials and Biomedical Engineering
- Photonics Research Ontario

LEADING DEVELOPMENTS:

MaRS Discovery District will bring together the best-in-class scientific and business communities to facilitate the commercialization of innovative scientific discoveries. The Toronto Biotechnology Commercialization Centre, a life science incubator, will be located within the MaRS Centre.

University of Toronto's Centre for Cellular and Biomolecular Research, a multidisciplinary team of 450 full-time researchers, will collaborate on five research platforms (animal models of disease, biomolecular engineering, functional imaging, protein structure, proteomics and bioinformatics).

The Structural Genomics Consortium is the largest international health research project ever funded in Canada and the first consortium of its kind. The $95 million partnership represents the U.K. research charity Wellcome Trust, Ontario and Canadian government research funding organizations, and the global pharmaceutical company Glaxo SmithKline Inc. The consortium will focus its efforts on determining the three-dimensional structure of more than 350 human proteins.

CONTACT INFORMATION:

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Waterloo Region

- ENGINEERING THE FUTURE OF BIOTECH

CORE STRENGTHS:
- Environmental science applications
- Bioinformatics
- Medical imaging/vision systems

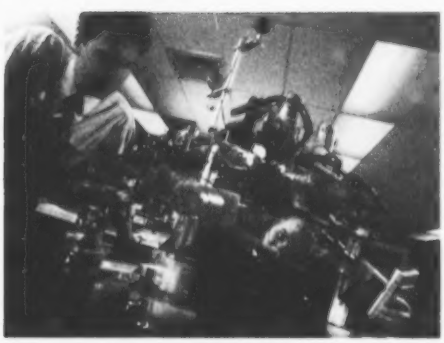
UNIVERSITIES/COLLEGES:
University of Waterloo, Wilfrid Laurier University, Conestoga College Institute of Technology and Advanced Learning

COMMERCIALIZATION CENTRES AND RESEARCH PARKS:
- University of Waterloo Research and Technology Park
- University of Waterloo Incubator Centre
- University of Waterloo's Innovate Inc.
- Communitech Business Accelerator Centre

SUCCESS STORIES:
- National leader in technology transfer with over 100 technology-based spinoffs

MAJOR RESEARCH INSTITUTES:
There are many research institutes affiliated with the University of Waterloo, including:

- Institute of Biochemistry and Molecular Biology
- Biotechnology Research Centre
- Centre for Research in Earth and Space Technology
- Photonics Research Ontario
- Waterloo Centre for Materials Technology
- The Centre for Applied Health Research
- Centre for Contact Lens Research
- Waterloo Centre for Atmospheric Science
- Natural Sciences and Engineering Research Council
- Industrial Research in Atmospheric Sciences



LEADING DEVELOPMENTS:

University of Waterloo researchers played an instrumental role in developing a computer program :alled RAPTOR (Rapid Protein Threading predictOR).
Local researchers involved in the international study of mice and human genomes.
University of Waterloo researchers received $29 million in provincial and federal funding to investigate water quality in southwestern Ontario and for characterizing soft materials such as polymers, proteins and liquid crystals.

CONTACT INFORMATION

Canada's Technology Triangle Inc.
(Waterloo Region and the cities of:
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N2G 4J3

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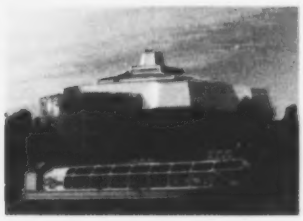
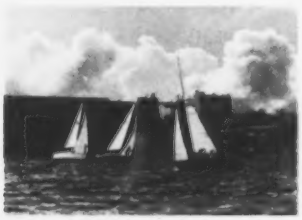
F: 519-576-4333
info@techtriangle.com
www.techtriangle.com

Emerging Biotechnology Areas





NORTH BAY

CORE STRENGTHS:
Bioforestry, biomining, blackfly DNA
UNIVERSITIES/COLLEGES:
Nipissing University, Canadore College
CONTACT:
North Bay Economic Development Commission
P.O. Box 360, 200 McIntyre St. E.
North Bay, Ontario
P1B 8H8
T: 705-474-0626 x428 or 1-800-465-1882 x428
F: 705-474-4493
nancy.creighton@cityofnorthbay.ca
www.cityofnorthbay.ca

SAULT STE. MARIE

CORE STRENGTHS:
Forest ecosystem, insect genomics, bio-based pest management, freshwater fisheries
UNIVERSITIES/COLLEGES:
Algoma University College, Sault College of Applied Arts & Technology
KEY RESEARCH INSTITUTES:
Great Lakes Forest Research Centre
Ontario Forest Research Institute
Great Lakes Laboratory for Fisheries and Aquatic Sciences
CONTACT:
Upper Lakes Environmental Research Network
443 Northern Avenue E.,
P.O. Box 60
Sault Ste. Marie, Ontario
P6A 5L3
T: 705-759-2554 x540
F: 705-253-9986
margo.shaw@saultc.on.ca
www.ulern.on.ca

SUDBURY

CORE STRENGTHS:
Bioenvironmental, bioforestry, biomining, contract research for biological materials, pharmacokinetics
UNIVERSITIES/COLLEGES:
Northern Ontario Medical School
Laurentian University, Cambrian College, Collège Boréal
KEY RESEARCH INSTITUTES:
Neureka Research Corp.
Northeastern Ontario Regional Cancer Centre
Sudbury Neutrino Observatory
Mining Innovation, Rehabilitation and Applied Research Corp.
CONTACT:
City of Greater Sudbury Development Corp.
Box 5000, Station A
Sudbury, Ontario
P3E 5K3
T: 705-674-4455 x4606
F: 705-671-6767
stephanie.harris@city.greatersudbury.on.ca
www.city.greatersudbury.on.ca

THUNDER BAY

CORE STRENGTHS:
DNA analysis and forensic services, genetic algorithms and data modelling, silviculture, forestry/pulp and paper, soil and mineralogy R&D
UNIVERSITIES/COLLEGES:
Northern Ontario Medical School
Lakehead University, Confederation College
KEY RESEARCH INSTITUTES:
Paleo-DNA Laboratory
LUSTR Co-operative Inc.
Northwestern Ontario Regional Cancer Centre
CONTACT:
City of Thunder Bay Economic Development Department
P.O. Box 800
Thunder Bay, Ontario
P7C 5K4
T: 807-625-3880
or 1-800-668-9360
F: 807-623-3962
dbrandt@city.thunder-bay.on.ca
www.developthunderbay.com

NIAGARA REGION

CORE STRENGTHS:
Oenology and viticulture, agri-food and greenhouse vegetable operations
UNIVERSITIES/COLLEGES:
Brock University, Niagara College Canada
KEY RESEARCH INSTITUTES:
Horticultural Research Institute of Ontario
Agriculture and Agri-Food Canada Pest Management Research Centre
Cool Climate Oenology and Viticulture Institute (CCOVI)
CONTACT:
Brock University
500 Glenridge Ave.
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T: 905-688-5550 x4716
F: 905-688-3104
mowen@brocku.ca
www.brocku.ca

Major Commercialization Initiatives

MEDICAL AND RELATED SCIENCES (MaRS) DISCOVERY DISTRICT

MaRS Discovery District will help turn great science into great business. MaRS will bring together the best-in-class scientific and business communities to facilitate commercialization of discovery.

The MaRS Centre, a 1.3-million-square-foot convergence complex, will be located in downtown Toronto, in the heart of one of the largest concentrations of medical and scientific research in North America. Startups and established companies, business and scientific support services, and venture capital will all be located under one roof. From this site, scientific and commercialization services will be networked to support researchers and entrepreneurs across Ontario and beyond.

The Toronto Biotechnology Commercialization Centre, a life science incubator, will be located in the MaRS Centre.

CONTACT INFORMATION

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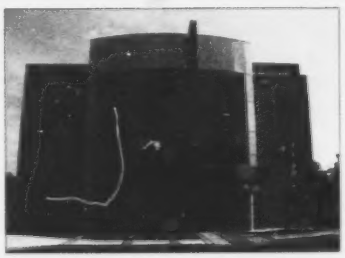
THE LONDON BIOTECHNOLOGY COMMERCIALIZATION CENTRE (LBCC)



Located at the University of Western Ontario (UWO) Research Park, this 50,000-square-foot facility opened in 2002. The LBCC is a collaboration of the City of London, the Lawson Health Research Institute, the London Health Sciences Centre, Robarts Research Institute and UWO. Its mandate is to help medical and related startup companies realize commercial viability through the provision of shared management, office space and support staff as well as state-of-the-art research facilities, including wet and dry lab space.

CONTACT INFORMATION

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Commercialization Centre
700 Collip Circle
London, Ontario N6G 4X8

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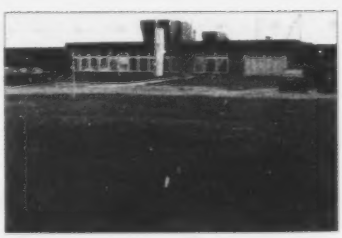
F: 519-858-5142
peter@lbcc.on.ca
www.lbcc.on.ca

THE OTTAWA BIOTECHNOLOGY INCUBATION CENTRE (OBIC)



The Ottawa Biotechnology Incubation Centre (OBIC) was formed to assist public and private researchers and investors in developing high-value commercial products. OBIC Farm, completed in October 2001 is an 18,000 sq ft facility offering laboratories, offices, meeting rooms, bio-informatics resources, small animal holding facilities, greenhouses and access to research land. It is well suited to start-up biotechnology enterprises whose research origin is in agricultural biotechnology. Phase II, OBIC Park is a 25,000 sq ft facility that will open at the beginning of 2004 offering facilities and resources particularly attractive to companies in the health and medical biotechnology field.

CONTACT INFORMATION

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600 Peter Morand
Crescent, Suite 250
Ottawa, Ontario K1G 5Z3

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F: 613-738-1206
engelhardt@obic.ca
www.obic.ca

Ontario Biotechnology at a Glance

BIOCORRIDOR MUNICIPALITIES

SECTORS	GUELPH	[illegible]	KINGSTON	LONDON	MISSISSAUGA	OTTAWA	TORONTO	WATERLOO REG
Biomedical/pharmaceutical		•	•	•	•	•	•	
Medical devices/diagnostics		•	•	•	•	•	•	•
Genomics/proteomics	•	•		•		•	•	•
Agricultural biotech	•		•			•		•
Nutraceuticals	•				•			
Aquaculture	•							•
Bioenvironmental	•		•			•		•
Bioforestry								
Bioproducts	•		•			•		
ACADEMIA								
University	•	•	•	•	•	•	•	•
College	•	•	•	•		•	•	•
RESEARCH FACILITIES								
Commercialization Centre	•	•		•		•	•	•
Research Park	•		•	•	•	•		•

EMERGING BIOTECHNOLOGY AREAS

SECTORS	NORTH BAY	SAULT STE MARIE	SUDBURY	THUNDER BAY	NIAGARA REGION
Biomedical/pharmaceutical			•	•	
Medical devices/diagnostics					
Genomics/proteomics		•		•	
Agricultural biotech				•	•
Nutraceuticals					
Aquaculture		•			
Bioenvironmental	•	•	•		
Bioforestry	•	•	•	•	
Bioproducts					
ACADEMIA					
University	•		•	•	•
College	•	•	•	•	•

Ontario Biotechnology at a Glance

BIOCORRIDOR MUNICIPALITIES

SECTORS	GUELPH		KINGSTON	LONDON	MISSISSAUGA		TORONTO	WATERLOO REG
Biomedical/pharmaceutical		•	•	•	•	•	•	
Medical devices/diagnostics		•	•	•	•	•	•	•
Genomics/proteomics	•	•		•		•	•	•
Agricultural biotech	•		•			•		•
Nutraceuticals	•				•			
Aquaculture	•							•
Bioenvironmental	•		•			•		•
Bioforestry								
Bioproducts	•		•			•		
ACADEMIA								
University	•	•	•	•	•	•	•	•
College	•	•	•	•		•	•	•
RESEARCH FACILITIES								
Commercialization Centre	•	•		•		•	•	•
Research Park	•		•	•	•	•		•

EMERGING BIOTECHNOLOGY AREAS

SECTORS	NORTH BAY	SAULT STE. MARIE		THUNDER BAY	
Biomedical/pharmaceutical			•	•	
Medical devices/diagnostics					
Genomics/proteomics		•		•	
Agricultural biotech				•	•
Nutraceuticals					
Aquaculture		•			
Bioenvironmental	•	•	•		
Bioforestry	•	•	•	•	
Bioproducts					
ACADEMIA					
University	•		•	•	•
College	•	•	•	•	•

biotech
ONTARIO

biotechontario.com
the premier source for information on the biotech community in Ontario.